

**F-7056**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant : Akio USUI  
Serial No. : (Not Yet Known)  
Filed : Concurrently Herewith  
For : FLOWING EXOTHERMIC COMPOSITION  
HEATER ELEMENT USING THE SAME AND  
PROCESS FOR MANUFACTURING THE SAME  
Group Art Unit : (Not Yet Known)  
Examiner : (Not Yet Known)

Hon. Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

**PRELIMINARY AMENDMENT**

Sir:

Preliminary to examination, please amend the above-identified patent  
application as follows:

**IN THE SPECIFICATION:**

Please replace indicated paragraphs of the specification with replacement paragraphs presented below. Appendix III is attached hereto having marked versions of said indicated paragraphs with amendments indicated by brackets and underlining.

Page 1: delete the first subheading;

Page 2: delete the first subheading;

Page 3: after the second full paragraph, insert the following heading:

SUMMARY OF THE INVENTION

Page 39: replace the first subheading with the following:

BRIEF EXPLANATION OF THE DRAWING

Page 39: after the first full paragraph, insert the following heading:

DETAILED DESCRIPTION OF THE INVENTION

**IN THE CLAIMS:**

Please substitute for corresponding pending claims the claims as shown rewritten below with amendments effected therein. Appendix I is attached hereto having marked versions of said claims with amendments indicated by brackets and underlining.

1. (Amended) A flowing exothermic composition, comprising an exothermic composition for forming a heater element by lamination and encapsulation in a packaging material, wherein the exothermic composition has a plastic flowability and is controlled by the plastic flowability.

2. (Amended) The flowing exothermic composition according to claim 1, wherein the plastic flowability is in a range of 0.5 to 20 kg/cm<sup>2</sup> at a temperature of 20°C.

3. (Amended) The flowing exothermic composition according to claim 1 or 2, wherein, after the exothermic composition is laminated and encapsulated in a packaging material, moisture in the exothermic composition as a barrier is moved to a water-absorbing sheet, and whereby continuous voids are formed in an interior of said exothermic composition.

4. (Amended) The flowing exothermic composition according to any one of claims 1 to 2, wherein a void-forming fiber is contained in the exothermic composition.

6. A heater element, wherein the flowing exothermic composition according to any one of claims 1 to 2 is laminated and encapsulated in a packaging material, at least a part of the packaging material having a breathability.

7. (Amended) The heater element according to claim 6, wherein a breathable water-absorbing sheet covers one side or both sides of the exothermic composition.

8. (Amended) The heater element according to claim 7, wherein the breathable water-absorbing sheet is laminated so as not to exist in a sealing part.

9. (Amended) The heater element according to claim 7, wherein the breathable water-absorbing sheet is formed by inclusion of a water-absorbing agent in a water-absorbing support.

10. (Amended) A process for manufacturing a heater element, which comprises patterning and laminating the flowing exothermic composition according to any one of claims 1 to 2 on a water-absorbing sheet having breathability, further laminating another water-absorbing sheet thereon so as to cover the exothermic composition, fixing respective water-absorbing sheets with the adhering force of the exothermic composition in a state where the exothermic composition is held therebetween, which is punched except for a sealing part into a greater shape than that of an exothermic composition to form a laminate, and then holding this laminate between a substrate and a covering material to thermally fusion bond or thermally adhere a sealing part between the covering material and the substrate.

**IN THE ABSTRACT:**

Please replace the abstract with the substitute abstract submitted on the following separate page. Appendix II is attached hereto having marked versions of said abstract with amendments indicated by brackets and underlining.

**ABSTRACT OF THE DISCLOSURE**

An exothermic composition for forming a heater element by lamination and encapsulation in a packaging material, an exothermic composition has plastic flowability and is controlled by the flowability, the loss of an exothermic material at manufacturing can be prevented, and a heater element having a better handling property and an arbitrary shape can be simply manufactured. An exothermic composition can be distributed and maintained in a packaging material at a uniform thickness without imparting excess load on an extruding pump or the like of a coater. In particular, by adopting such the essential features that the aforementioned exothermic composition is laminated and encapsulated in the aforementioned packaging material and, a barrier moisture in the exothermic composition is moved to a water-absorbing sheet, continuous voids are formed in the interior of the aforementioned exothermic composition, and complex temperature control becomes possible.

**REMARKS**

Claims 1-10 are pending in the present application. The application is amended to correct grammatical and idiomatic informalities and to place the application into proper conformance with U.S. patent practice.

In light of the foregoing, it is respectfully submitted that the application is in proper form for allowance of all claims and notice to that effect is earnestly solicited. Please charge any fee deficiency or credit any excess payment to Deposit Account No. 10-1250.

Respectfully submitted,  
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## APPENDIX I

### AMENDED CLAIMS WITH AMENDMENTS INDICATED THEREIN BY BRACKETS AND UNDERLINING

1. (Amended) A flowing exothermic composition, comprising an exothermic composition for forming a heater element by lamination and encapsulation in a packaging material, wherein the exothermic composition has [the] a plastic flowability and is controlled by the plastic flowability.
2. (Amended) The flowing exothermic composition according to claim 1, wherein the plastic flowability is in a range of 0.5 to 20 kg/cm<sup>2</sup> at a temperature of 20°C.
3. (Amended) The flowing exothermic composition according to claim 1 or 2, wherein, after the [flowing] exothermic composition is laminated and encapsulated in a packaging material, [the] moisture in the [flowing] exothermic composition as a barrier is moved to a water-absorbing sheet, and whereby continuous voids are formed in [the] an interior of said [flowing] exothermic composition.



4. (Amended) The flowing exothermic composition according to any one of claims 1 to [3] 2, wherein a void-forming fiber is contained in the [flowing] exothermic composition.

6. A heater element, wherein the flowing exothermic composition according to any one of claims 1 to [5] 2 is laminated and encapsulated in a packaging material, at least a part of the packaging material having [the] a breathability.

7. (Amended) The heater element according to claim 6, wherein a breathable water-absorbing sheet covers one side or both sides of the [flowing] exothermic composition.

8. (Amended) The heater element according to claim 7, wherein the [a] breathable water-absorbing sheet is laminated so as not to exist in a sealing part.

9. (Amended) The heater element according to claim 7 [or 8], wherein the breathable water-absorbing sheet is formed by inclusion of a water-absorbing agent in a water-absorbing support.

10. (Amended) A process for manufacturing a heater element, which comprises patterning and laminating the flowing exothermic composition according to any one of claims 1 to [5] 2 on a [sheet-like] water-absorbing sheet having [the] breathability, further laminating another water-absorbing sheet thereon so as to cover the exothermic composition, fixing respective water-absorbing sheets with the adhering force of the exothermic composition in [the] a state where the exothermic composition is held therebetween, which is punched except for a sealing part into a greater shape than that of an exothermic composition to form a laminate, and then holding this laminate between a substrate and a covering material to thermally fusion bond or thermally adhere a sealing part between the covering material and the substrate.

**APPENDIX II****AMENDED ABSTRACT WITH AMENDMENTS INDICATED THEREIN  
BY BRACKETS AND UNDERLINING****ABSTRACT OF THE DISCLOSURE [Absrtact]**

[ In an] An exothermic composition for forming a heater element by lamination and encapsulation in a packaging material, [when this] an exothermic composition has [the] plastic flowability and is controlled by the flowability, the loss of an exothermic material at manufacturing can be prevented, and a heater element having [the] a better handling property and an arbitrary shape can be simply manufactured. [Moreover, an] An exothermic composition can be distributed and maintained in a packaging material at an uniform thickness without imparting excess load on an extruding pump or the like of a coater. In particular, by adopting such the essential features that the aforementioned exothermic composition is laminated and encapsulated in the aforementioned packaging material and, a barrier moisture in the exothermic composition is moved to a water-absorbing sheet, continuous voids are formed in the interior of the aforementioned exothermic composition, and complex temperature control becomes possible. [An object of the invention is to provide such the extremely useful flowing exothermic composition, to provide a heater element using the

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same (flowing exothermic composition), and to provide a process for manufacturing the same (heater element).

The present invention is an exothermic composition for forming a heater element by lamination and encapsulation in a packaging material, this exothermic composition having the plastic flowability, said composition being a flowing exothermic composition which is controlled by the flowability, a heater element using the same and a process for manufacturing the same.

#### Description of Reference Numerals

- 1: Packaging material
- 2: Exothermic composition
- 3: Water-absorbing sheet
- 4: Sealing part
- 5: Substrate
- 6: Covering material
- 7: Adhesive layer]

### APPENDIX III

#### AMENDED SPECIFICATION PARAGRAPHS WITH AMENDMENTS INDICATED THEREIN BY BRACKETS AND UNDERLINING

Page 1: delete the first subheading:

[Field of the Invention]

Page 2: delete the first subheading:

[Prior Art]

Page 3: after the second full paragraph, insert the following heading:

SUMMARY OF THE INVENTION

Page 39: amend the first subheading as shown below:

[Brief explanation of the drawing] BRIEF EXPLANATION

OF THE DRAWING

Page 39: after the first full paragraph, insert the following heading:

DETAILED DESCRIPTION OF THE INVENTION